

# UARS/ACRIM2 TOTAL SOLAR IRRADIANCE OBSERVATIONS<sup>1</sup> COMPLETE MISSION: 10/04/91 TO 5/05/01

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## Description of the experiment

The second Active Cavity Radiometer Irradiance Monitor (ACRIM) experiment (ACRIM2) provided the total solar irradiance (TSI) observations for NASA's Earth Science program since its launch on the Upper Atmospheric Research Satellite (UARS) in 1991 until failure of its power supply in May 2001 (~ 9 ½ years). The UARS orbit<sup>2</sup> provides about 60 minutes of sunlight of which about 35 are available for solar viewing by ACRIM2 and the two other instruments on the Solar-Stellar Pointing Platform (SSPP).

The UARS/ACRIM2 instrument consists of three, nominally identical Active Cavity Radiometers (ACR's). ACR's are electrically self-calibrated, cavity pyrheliometers with uniform sensitivity from the extreme ultraviolet to the far infrared. A servo system controls the electrical power dissipated in a heating element in intimate thermal contact with the detector in the shutter open (observation) and shutter closed (reference) phases of measurement. The design of the instrument and its operational mode strives to achieve equivalent thermodynamic conditions in the detector during reference and observation data sampling. An accurate knowledge of the effective absorptance of the detector for the TSI, the area over which the detector is illuminated and the electrical heating power facilitates accurate measurement of TSI on an absolute basis in the International System of Units.

TSI results are calculated using an equation relating the key instrument parameters:

$$H_{TSI} = K (P_{ref} - P_{obs}) + E$$

Where  $H_{TSI}$  is the calculated irradiance,  $P_{ref}$  and  $P_{obs}$  are the cavity electrical heating powers during the reference (shutter closed) and observation (shutter open) phases of the measurement.  $K$  is the standard detector constant of proportionality which contains the instrument parameters: (1) area of the primary aperture, (2) effective cavity absorptance for TSI, (3) cavity reflectance for solar irradiance, and (4) reflectance of solar radiation by the cavity field of view.  $E$  is an error function that summarizes numerous small radiative and conductive terms that contribute to uncertainty due to small departures from instrument equilibrium between the two measurement phases.

Nominal observations are comprised of a series of shutter operations, opening or closing every 65.536 seconds. The observational sequence is symmetrical to minimize systematic error. The settling time to 1 bit of its 16 bit A/D converter for the ACR is less than 30 seconds but the entire first

<sup>1</sup> Version 2: all ACRIM2 results re-processed in 2001. <sup>2</sup> Inclination: 57 degrees, altitude: 585 km

half of each shutter open cycle is disregarded in the computation of results. Each shutter cycle solar observation uses the average value of the electrical self-calibration during adjacent shutter closed periods to provide as a reference.

### Discussion of the results

ACRIM uses a comprehensive method to calibrate degradation of its sensors by solar exposure. The primary solar detector monitors TSI at every opportunity. A second ACR is compared with the first once a month for only one orbit to minimize its degradation. The third ACR is compared with the first two for one orbit every third month and is assumed to be degradation-free. This three-channel degradation approach is the most comprehensive employed by any TSI experiment and can provide calibration of degradation to within 10 ppm/year or better.

Corrections for instrument temperature dependence, solar viewing angle, sun-satellite distance and relative velocity, and sensor degradation are applied to the calculated  $H_{TSI}$  values to obtain the total solar irradiance data at 1 Astronomical Unit. The ACRIM's Sun position sensor signals and instrument temperature data are used to correct solar pointing errors and temperature dependencies. Satellite Tool Kit algorithms are used with NORAD UARS orbital elements to compute the sun-satellite distance and relative velocity. The daily averages of the ACRIM2 total solar irradiance are calculated from about 240 daily shutter-open average values. The uncertainty of the daily average ACRIM2 total irradiance values is about 5 ppm.

The 'absolute' uncertainty of current solar monitoring instrumentation ( $\sim +/- 0.1\%$ ) is unable to provide the  $+/- 0.1\%$ /century knowledge of TSI variability required for climate change studies. The usefulness of the long term TSI database depends critically on the precision with which successive satellite solar monitors' results can be related. This requires careful execution an 'overlap strategy' in which successive satellite experiments are directly compared, transferring their operational precision to the database.<sup>3</sup>

### The long-term TSI database

The UARS/ACRIM2 experiment began two years after the end of SMM/ACRIM1 because of the delays caused by the Challenger accident. Although originally planned, an overlap strategy could not be implemented directly by ACRIM's alone. The next best option was derivation of the relationship between their results based on mutual comparisons with another TSI experiment that overlapped both ACRIM's. Two are available: the NOAA Nimbus7/ERB (operations from late 1978 to early 1993) and the NASA ERBS (operations from early 1984 to the present). The Nimbus7/ERB data was chosen because it has the most comparative observations with ACRIM1 and 2 and was the best calibrated of the two<sup>4</sup>.

The results reported in the tabulation for ACRIM2 are based on the scale defined by the metrology of its own sensors (specifically those of sensor C, the least exposed cavity). The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with Nimbus7/ERB, is 1.002609 with a 1 sigma computational standard error of  $< 20$  ppm. Some additional uncertainty has undoubtedly been

<sup>3</sup> This is strictly true only for 'ambient temperature' sensors. Calibration of TSI monitors by cryogenic pyrheliometers near the temperature of liquid He would be able to provide  $+/- 0.01\%$  SI accuracy, thereby removing the requirement of an overlap strategy.

<sup>4</sup> The uncertainties of the Nimbus7/ERB and ERBS TSI results are larger than the ACRIM's, primarily because of limitations imposed by their satellite platforms. Both ERB and ERBS were able to conduct electrical self-calibrations only once every two weeks, compared to once per minute for ACRIM's. The ERB TSI experiment observed the sun for a few minutes every orbit on 3 of every 4 days. The ERBS TSI experiment is limited to a few minutes' observations once every 14 days. Neither ERB nor ERBS has the degradation self-calibration capability of the ACRIM experiments although their lower duty cycles decrease their expected rates of degradation.

introduced by un-calibrated degradation of Nimbus7/ERB during its many years of operation but it is believed to be small compared to the ratio derived above.

### The ACRIM composite TSI database

Construction of the long-term composite database required for climate change studies requires the combined results of many individual experiments. Since each experiment reports observations based on the performance of their sensors (their so-called 'native scale') they must be related to each other by normalizing to the same 'scale' using comparisons of overlapping results.

Degradation of the sensors in the space flight environment is a significant factor in understanding the quality of each data set. The experiments with the most effective self-calibration approaches will provide the best results. The composite database shown in the figure has been constructed using these principles which dictated the use of the following TSI data sets: Nimbus7/ERB, ACRIM1, ACRIM2 and ACRIM3.

#### Components of ACRIM Composite TSI database

Experiment	Operational Span	Data Used
Nimbus7/ERB	1978–1993	1978–80, 1989–1991
SMM/ACRIM1	1980–1989	1980–1989
UARS/ACRIM2	1991–2001	1991–2000
ACRIMSAT/ACRIM3	2000 →	2000 →

Several features of the 22+ year TSI record stand out clearly. On the timescale of a sunspot cycle (~ 10 - 11 years) there is the characteristic ~ 0.1 % peak-to-peak variation in solar luminosity between solar maximum and minimum periods. The higher variation of TSI during solar activity maxima is caused by the sunspot and facular components of active regions. The quieter solar minima reflect the solar luminosity 'background' level for TSI.

#### TSI trend

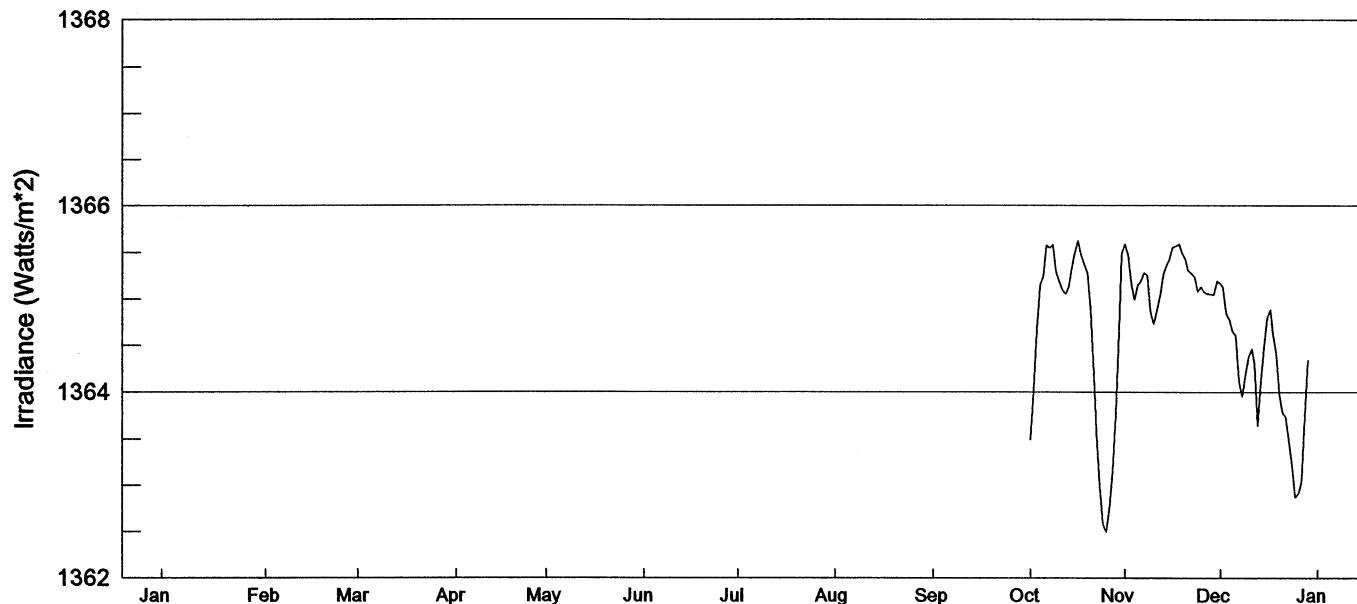
The composite record now allows comparison of two solar cycle minima. TSI has been integrated over 6 month periods centered on the reckoned minima at 1986.75 and 1996.5 years. An upward trend, visually obvious in figure 3, was found to have a value of 0.037 %/decade.

#### The Data

The ASCII file contains the daily average UARS/ACRIM2 total solar irradiance in units of W/m<sup>2</sup> at 1 A.U. A diskette of the data is available from NGDC. The data are also available on-line at the ACRIM Science Team website ([acrim.com](http://acrim.com)). They are also available on the NGDC ftp web site at [ftp://ftp.ngdc.noaa.gov/STP/SOLAR\\_DATA/SOLAR\\_IRRADIANCE](ftp://ftp.ngdc.noaa.gov/STP/SOLAR_DATA/SOLAR_IRRADIANCE). If these data are used in publication please acknowledge as follows: UARS/ACRIM2 total solar irradiance used here are produced by the ACRIM Science Team of Columbia University under a contract with the National Aeronautics and Space Administration.

**1991 Daily Mean Solar Irradiance  
UARS (ACRIM2) Completed Mission**

29  
Misc



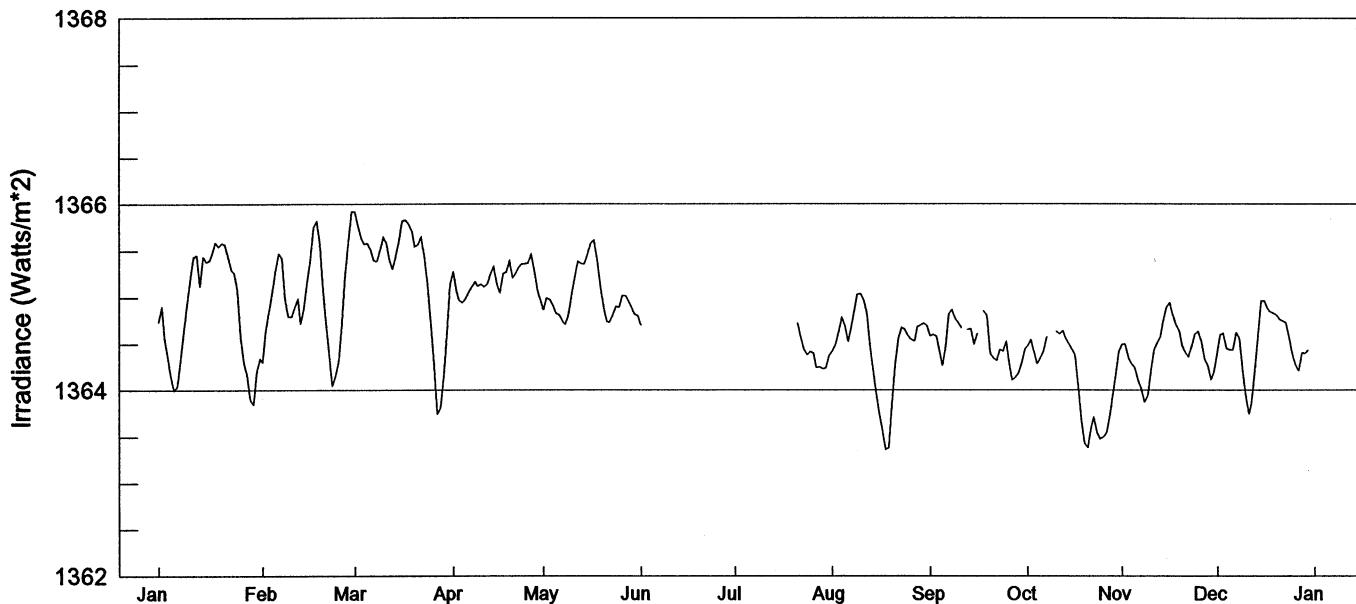
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1										1364.649	1365.048	
2										1365.481	1365.191	
3										1365.587	1365.165	
4										1363.489	1365.474	1365.129
5										1364.022	1365.160	1364.844
6										1364.659	1364.995	1364.778
7										1365.151	1365.146	1364.653
8										1365.241	1365.190	1364.613
9										1365.571	1365.279	1364.119
10										1365.547	1365.249	1363.957
11										1365.581	1364.852	1364.185
12										1365.284	1364.730	1364.380
13										1365.185	1364.881	1364.457
14										1365.096	1365.042	1364.325
15										1365.053	1365.266	1363.643
16										1365.132	1365.348	1364.110
17										1365.313	1365.421	1364.481
18										1365.489	1365.553	1364.799
19										1365.618	1365.564	1364.883
20										1365.473	1365.584	1364.631
21										1365.365	1365.482	1364.425
22										1365.278	1365.438	1363.982
23										1364.882	1365.304	1363.783
24										1364.183	1365.272	1363.734
25										1363.567	1365.235	1363.484
26										1362.993	1365.081	1363.200
27										1362.579	1365.127	1362.867
28										1362.502	1365.077	1362.906
29										1362.744	1365.055	1363.048
30										1363.142	1365.053	1363.741
31										1363.760		1364.352

NOTE: -- indicates data not available.

Mission started 4 October, 1991.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

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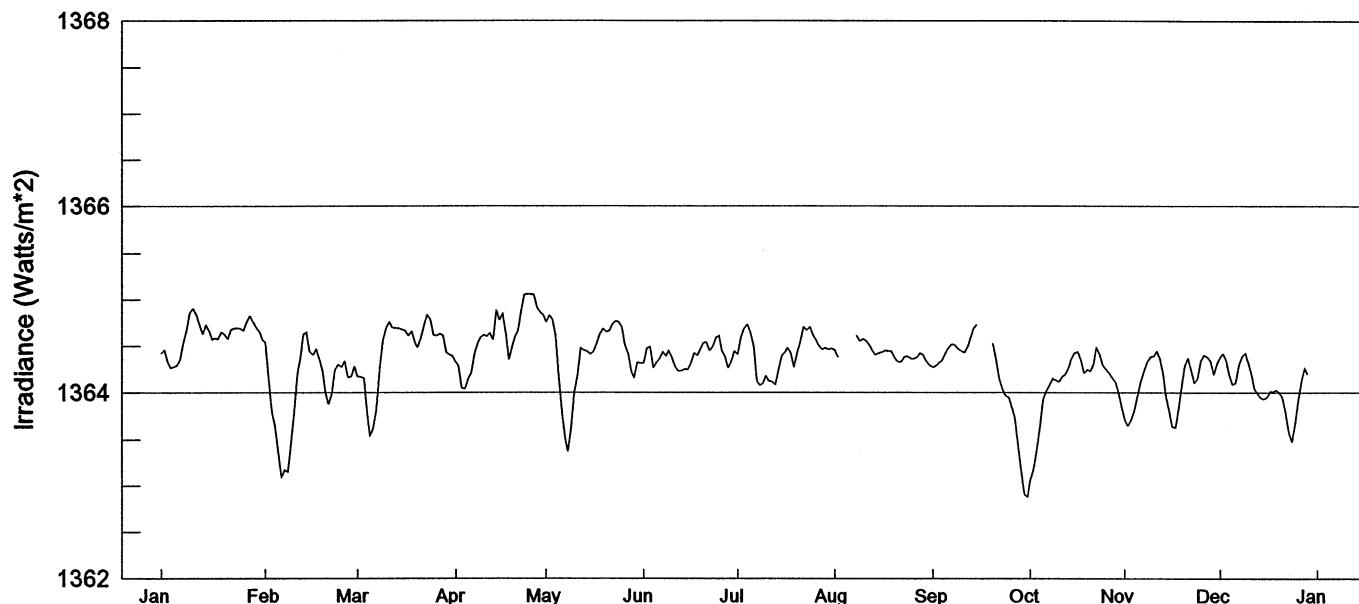
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.740	1364.204	1365.589	1364.603	1364.966	1364.808	—	1364.378	1364.699	1364.298	1364.418	1364.216
2	1364.906	1364.346	1365.918	1365.136	1364.869	1364.700	—	1364.416	1364.588	1364.449	1364.497	1364.422
3	1364.571	1364.302	1365.919	1365.280	1364.992	—	—	1364.493	1364.603	1364.477	1364.503	1364.601
4	1364.367	1364.660	1365.765	1365.111	1364.976	—	—	1364.620	1364.581	1364.551	1364.359	1364.617
5	1364.147	1364.859	1365.635	1364.969	1364.918	—	—	1364.784	1364.436	1364.421	1364.292	1364.452
6	1363.993	1365.051	1365.572	1364.946	1364.825	—	—	1364.698	1364.268	1364.291	1364.249	1364.436
7	1364.042	1365.291	1365.580	1364.986	1364.814	—	—	1364.530	1364.469	1364.352	1364.113	1364.436
8	1364.332	1365.471	1365.518	1365.061	1364.742	—	—	1364.655	1364.826	1364.423	1364.017	1364.625
9	1364.635	1365.424	1365.392	1365.113	1364.714	—	—	1364.844	1364.869	1364.583	1363.874	1364.567
10	1364.925	1364.972	1365.391	1365.166	1364.806	—	—	1365.030	1364.776	—	1363.931	1364.218
11	1365.200	1364.793	1365.514	1365.120	1365.025	—	—	1365.042	1364.728	—	1364.210	1363.936
12	1365.439	1364.794	1365.645	1365.143	1365.214	—	—	1364.978	1364.673	1364.639	1364.437	1363.742
13	1365.452	1364.898	1365.577	1365.118	1365.389	—	—	1364.844	—	1364.611	1364.517	1363.864
14	1365.124	1364.983	1365.411	1365.139	1365.358	—	—	1364.472	1364.655	1364.642	1364.588	1364.213
15	1365.439	1364.720	1365.309	1365.248	1365.363	—	—	1364.264	1364.664	1364.557	1364.748	1364.591
16	1365.383	1364.874	1365.442	1365.334	1365.461	—	—	1363.997	1364.498	1364.509	1364.895	1364.963
17	1365.395	1365.159	1365.597	1365.149	1365.580	—	—	1363.753	1364.616	1364.446	1364.945	1364.961
18	1365.471	1365.392	1365.823	1365.051	1365.614	—	—	1363.578	—	1364.385	1364.814	1364.883
19	1365.583	1365.741	1365.834	1365.256	1365.405	—	—	1363.359	1364.852	1364.042	1364.706	1364.845
20	1365.546	1365.821	1365.786	1365.273	1365.124	—	—	1363.379	1364.804	1363.666	1364.642	1364.837
21	1365.580	1365.580	1365.703	1365.392	1364.903	—	—	1363.844	1364.399	1363.419	1364.491	1364.817
22	1365.568	1365.158	1365.544	1365.209	1364.738	—	1364.724	1364.283	1364.352	1363.383	1364.411	1364.767
23	1365.432	1364.752	1365.563	1365.251	1364.731	—	1364.565	1364.571	1364.323	1363.596	1364.365	1364.747
24	1365.289	1364.403	1365.649	1365.318	1364.808	—	1364.435	1364.678	1364.440	1363.710	1364.481	1364.731
25	1365.267	1364.050	1365.439	1365.359	1364.905	—	1364.383	1364.655	1364.423	1363.554	1364.611	1364.571
26	1365.080	1364.156	1365.140	1365.360	1364.898	—	1364.420	1364.591	1364.525	1363.474	1364.634	1364.393
27	1364.572	1364.319	1364.716	1365.366	1365.017	—	1364.395	1364.549	1364.323	1363.494	1364.535	1364.273
28	1364.300	1364.722	1364.278	1365.464	1365.018	—	1364.246	1364.532	1364.109	1363.536	1364.344	1364.216
29	1364.162	1365.250	1363.745	1365.289	1364.958	—	1364.257	1364.686	1364.138	1363.713	1364.277	1364.407
30	1363.890	—	1363.804	1365.071	1364.902	—	1364.233	1364.704	1364.188	1363.958	1364.118	1364.395
31	1363.846	—	1364.141	—	1364.820	—	1364.242	1364.725	—	1364.201	—	1364.436

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

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UARS (ACRIM2) Completed Mission**

31  
Misc

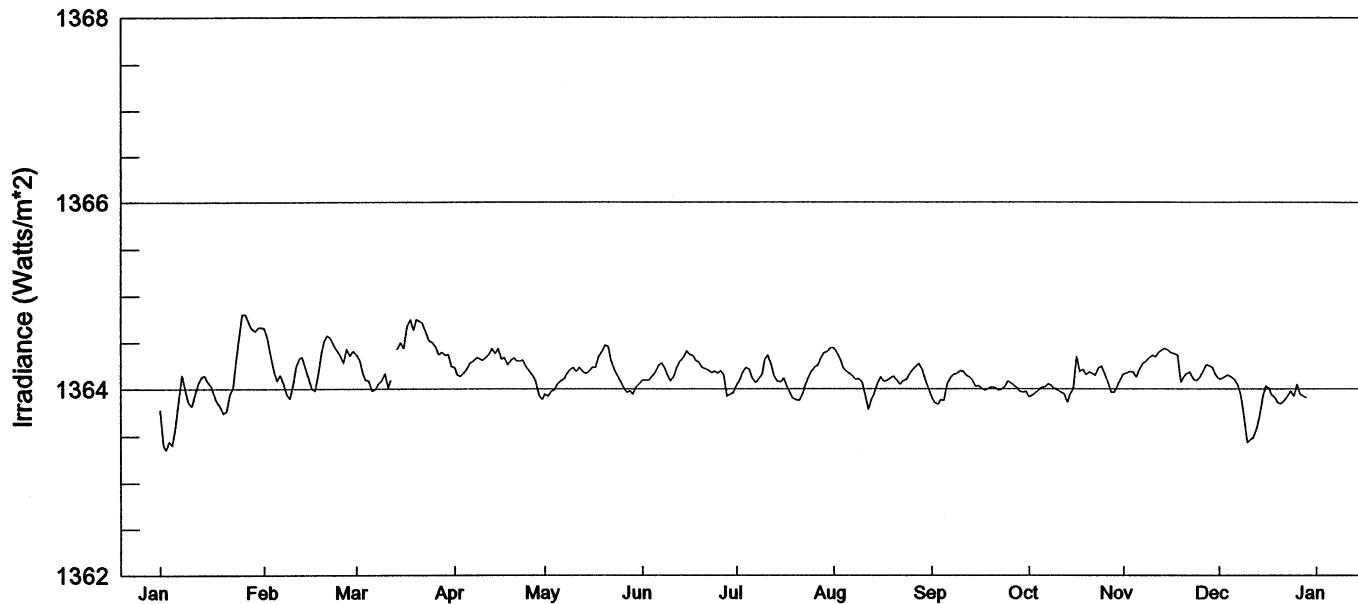


Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.428	1364.652	1364.167	1364.434	1364.862	1364.321	1364.337	1364.465	1364.335	1363.158	1363.996	1364.199
2	1364.460	1364.560	1364.171	1364.402	1364.830	1364.318	1364.449	1364.475	1364.298	1362.902	1363.856	1364.306
3	1364.346	1364.541	1364.282	1364.388	1364.761	1364.314	1364.412	1364.457	1364.271	1362.876	1363.714	1364.383
4	1364.268	1364.169	1364.170	1364.320	1364.828	1364.477	1364.588	1364.379	1364.289	1363.062	1363.644	1364.420
5	1364.273	1363.801	1364.172	1364.289	1364.784	1364.493	1364.689	—	1364.320	1363.166	1363.708	1364.357
6	1364.297	1363.646	1364.151	1364.052	1364.604	1364.267	1364.734	—	1364.341	1363.372	1363.813	1364.193
7	1364.348	1363.368	1363.841	1364.044	1364.161	1364.323	1364.641	—	1364.417	1363.616	1363.965	1364.092
8	1364.533	1363.085	1363.536	1364.146	1363.780	1364.362	1364.509	—	1364.480	1363.924	1364.122	1364.106
9	1364.668	1363.169	1363.616	1364.217	1363.503	1364.441	1364.122	—	1364.522	1364.013	1364.233	1364.295
10	1364.864	1363.149	1363.830	1364.419	1363.366	1364.393	1364.078	1364.610	1364.511	1364.084	1364.327	1364.390
11	1364.904	1363.454	1364.252	1364.535	1363.610	1364.454	1364.103	1364.554	1364.472	1364.149	1364.381	1364.422
12	1364.843	1363.801	1364.564	1364.587	1364.004	1364.379	1364.181	1364.577	1364.449	1364.134	1364.390	1364.316
13	1364.733	1364.205	1364.697	1364.616	1364.179	1364.283	1364.123	1364.553	1364.429	1364.117	1364.446	1364.191
14	1364.627	1364.392	1364.758	1364.601	1364.476	1364.233	1364.120	1364.509	1364.491	1364.171	1364.361	1364.043
15	1364.722	1364.623	1364.697	1364.634	1364.453	1364.235	1364.084	1364.447	1364.585	1364.202	1364.201	1363.995
16	1364.667	1364.645	1364.688	1364.568	1364.445	1364.253	1364.250	1364.408	1364.689	1364.275	1363.967	1363.946
17	1364.571	1364.436	1364.691	1364.880	1364.411	1364.246	1364.396	1364.425	1364.733	1364.365	1363.813	1363.932
18	1364.581	1364.407	1364.675	1364.780	1364.436	1364.321	1364.434	1364.433	—	1364.425	1363.630	1363.953
19	1364.577	1364.463	1364.661	1364.845	1364.529	1364.427	1364.476	1364.453	—	1364.439	1363.624	1364.018
20	1364.650	1364.353	1364.609	1364.643	1364.628	1364.401	1364.430	1364.446	—	1364.347	1363.844	1364.010
21	1364.623	1364.230	1364.659	1364.357	1364.687	1364.459	1364.277	1364.443	—	1364.213	1364.098	1364.025
22	1364.574	1364.007	1364.543	1364.494	1364.648	1364.535	1364.423	1364.369	1364.530	1364.250	1364.289	1364.000
23	1364.674	1363.881	1364.486	1364.610	1364.666	1364.539	1364.540	1364.331	1364.347	1364.233	1364.368	1363.956
24	1364.691	1363.978	1364.577	1364.659	1364.736	1364.453	1364.705	1364.330	1364.145	1364.313	1364.249	1363.788
25	1364.695	1364.249	1364.716	1364.877	1364.769	1364.494	1364.672	1364.387	1364.039	1364.483	1364.105	1363.579
26	1364.692	1364.305	1364.836	1365.050	1364.760	1364.590	1364.706	1364.389	1363.966	1364.417	1364.152	1363.478
27	1364.667	1364.272	1364.789	1365.057	1364.704	1364.606	1364.617	1364.362	1363.951	1364.294	1364.343	1363.663
28	1364.756	1364.336	1364.619	1365.058	1364.504	1364.460	1364.564	1364.363	1363.848	1364.255	1364.402	1363.912
29	1364.823		1364.608	1365.052	1364.418	1364.388	1364.509	1364.381	1363.742	1364.213	1364.387	1364.122
30	1364.759		1364.627	1364.910	1364.228	1364.268	1364.465	1364.423	1363.449	1364.157	1364.342	1364.267
31	1364.701		1364.609		1364.161		1364.476	1364.404		1364.112		1364.202

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

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UARS (ACRIM2) Completed Mission**



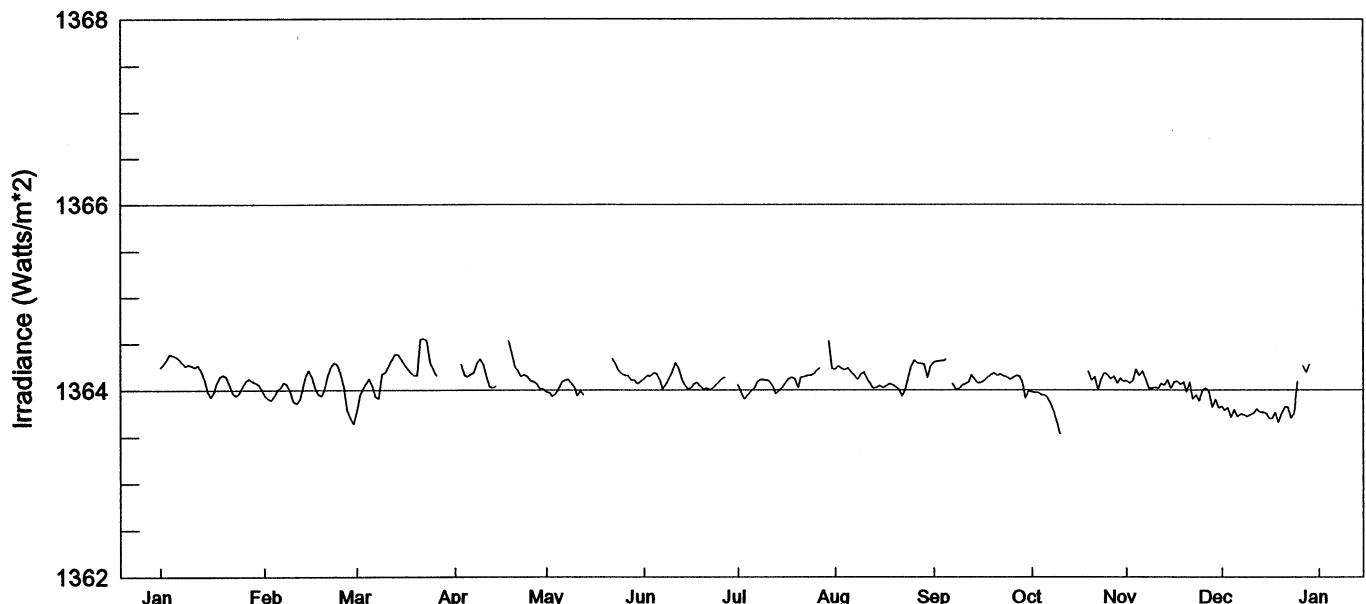
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1363.778	1364.662	1364.432	1364.365	1363.932	1364.022	1363.947	1364.405	1364.102	1363.973	1364.040	1364.230
2	1363.405	1364.664	1364.357	1364.372	1363.891	1364.054	1363.958	1364.449	1364.009	1363.968	1364.101	1364.151
3	1363.355	1364.657	1364.413	1364.244	1363.946	1364.095	1364.045	1364.444	1363.918	1363.975	1364.165	1364.114
4	1363.443	1364.555	1364.373	1364.237	1363.926	1364.096	1364.100	1364.400	1363.853	1363.922	1364.171	1364.110
5	1363.401	1364.373	1364.315	1364.151	1363.974	1364.095	1364.186	1364.327	1363.836	1363.936	1364.189	1364.141
6	1363.615	1364.209	1364.170	1364.140	1363.994	1364.137	1364.235	1364.226	1363.885	1363.961	1364.185	1364.151
7	1363.890	1364.090	1364.097	1364.175	1364.057	1364.180	1364.216	1364.194	1363.882	1363.986	1364.130	1364.132
8	1364.151	1364.151	1364.089	1364.220	1364.091	1364.255	1364.113	1364.169	1364.048	1364.021	1364.219	1364.104
9	1363.995	1364.061	1363.979	1364.285	1364.111	1364.282	1364.066	1364.146	1364.127	1364.022	1364.273	1364.050
10	1363.858	1363.945	1363.997	1364.301	1364.164	1364.228	1364.109	1364.106	1364.162	1364.054	1364.299	1363.930
11	1363.817	1363.897	1364.055	1364.335	1364.210	1364.152	1364.158	1364.107	1364.169	1364.038	1364.335	1363.700
12	1363.942	1364.047	1364.092	1364.329	1364.231	1364.088	1364.320	1364.080	1364.199	1364.002	1364.367	1363.428
13	1364.057	1364.245	1364.165	1364.306	1364.190	1364.135	1364.361	1363.946	1364.195	1363.992	1364.352	1363.463
14	1364.129	1364.333	1364.014	1364.338	1364.235	1364.241	1364.270	1363.784	1364.146	1363.965	1364.400	1363.479
15	1364.145	1364.346	1364.094	1364.373	1364.193	1364.304	1364.140	1363.895	1364.131	1363.945	1364.422	1363.568
16	1364.075	1364.231	—	1364.435	1364.165	1364.340	1364.087	1363.953	1364.097	1363.859	1364.442	1363.705
17	1364.039	1364.126	1364.432	1364.382	1364.191	1364.410	1364.079	1364.055	1364.029	1363.943	1364.427	1363.911
18	1363.956	1364.011	1364.500	1364.440	1364.230	1364.374	1364.117	1364.131	1364.035	1363.999	1364.392	1364.037
19	1363.866	1363.978	1364.436	1364.323	1364.237	1364.356	1364.046	1364.081	1364.001	1364.348	1364.385	1364.009
20	1363.814	1364.155	1364.679	1364.337	1364.349	1364.301	1363.971	1364.092	1363.992	1364.197	1364.362	1363.942
21	1363.740	1364.381	1364.747	1364.258	1364.406	1364.289	1363.904	1364.119	1364.009	1364.216	1364.077	1363.911
22	1363.764	1364.513	1364.638	1364.309	1364.470	1364.234	1363.887	1364.137	1364.023	1364.157	1364.130	1363.854
23	1363.937	1364.574	1364.743	1364.339	1364.457	1364.223	1363.880	1364.095	1364.014	1364.184	1364.175	1363.844
24	1364.017	1364.545	1364.736	1364.302	1364.311	1364.208	1363.938	1364.052	1363.991	1364.164	1364.186	1363.876
25	1364.261	1364.472	1364.706	1364.304	1364.223	1364.179	1364.052	1364.091	1363.996	1364.154	1364.115	1363.924
26	1364.540	1364.416	1364.613	1364.307	1364.150	1364.192	1364.138	1364.105	1364.021	1364.226	1364.092	1363.981
27	1364.802	1364.367	1364.523	1364.241	1364.081	1364.175	1364.198	1364.165	1364.083	1364.245	1364.127	1363.924
28	1364.803	1364.281	1364.503	1364.194	1364.009	1364.201	1364.238	1364.215	1364.073	1364.163	1364.192	1364.052
29	1364.717	—	1364.459	1364.149	1363.966	1364.158	1364.252	1364.247	1364.043	1364.066	1364.261	1363.949
30	1364.653	—	1364.373	1364.075	1363.982	1363.927	1364.334	1364.274	1364.012	1363.967	1364.254	1363.926
31	1364.623	—	1364.396	—	1363.945	—	1364.391	1364.217	—	1363.965	—	1363.903

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

**1995 Daily Mean Solar Irradiance  
UARS (ACRIM2) Completed Mission**

33  
Misc

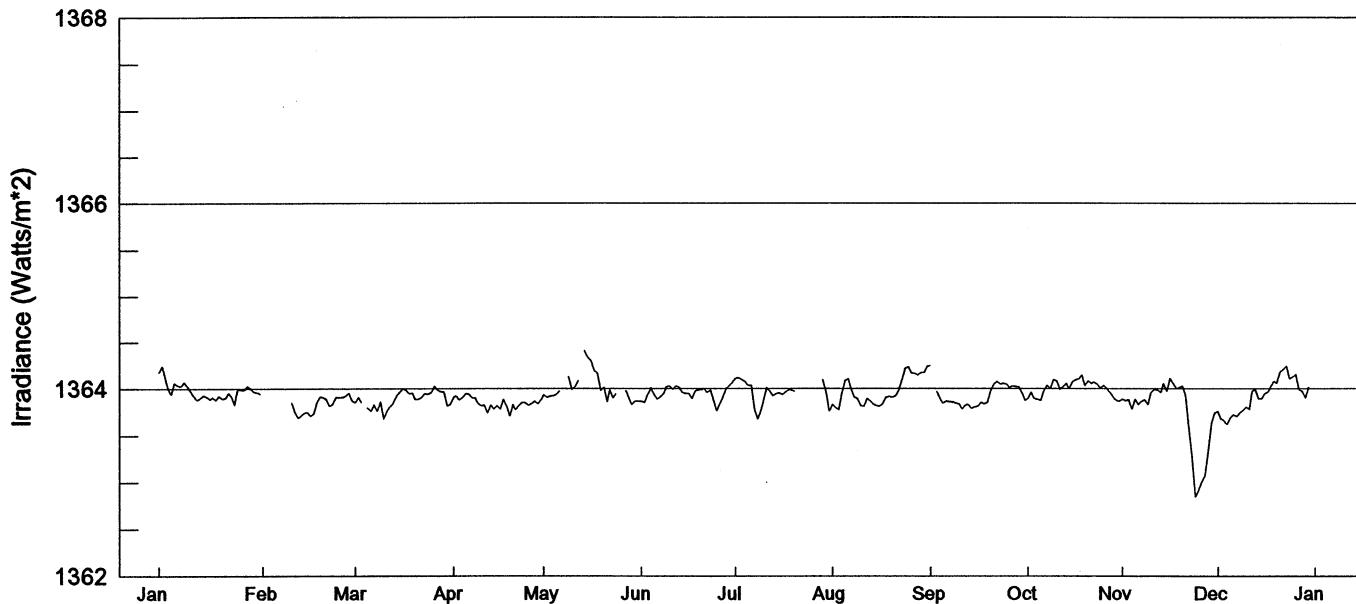


Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.246	1364.063	1363.789	—	1364.018	1364.068	—	1364.531	1364.137	1364.092	1364.131	1363.900
2	1364.274	1364.011	1363.699	—	1364.014	1364.098	—	1364.231	1364.258	1363.915	1364.099	1363.812
3	1364.323	1363.943	1363.641	—	1363.979	1364.123	1364.059	1364.226	1364.299	1363.993	1364.103	1363.821
4	1364.385	1363.915	1363.771	—	1363.971	1364.161	1363.977	1364.258	1364.306	1363.981	1364.076	1363.786
5	1364.377	1363.893	1363.943	—	1363.934	1364.149	1363.906	1364.234	1364.312	1363.973	1364.106	1363.813
6	1364.362	1363.936	1364.022	1364.271	1363.963	1364.185	1363.947	1364.222	1364.313	1363.972	1364.225	1363.708
7	1364.335	1364.001	1364.066	1364.162	1364.014	1364.181	1363.991	1364.243	1364.330	1363.948	1364.162	1363.789
8	1364.293	1364.028	1364.125	1364.142	1364.091	1364.112	1364.021	1364.197	—	1363.946	1364.206	1363.716
9	1364.258	1364.086	1364.049	1364.171	1364.110	1364.017	1364.088	1364.162	1364.071	1363.912	1364.123	1363.746
10	1364.274	1364.063	1363.924	1364.183	1364.118	1364.062	1364.121	1364.119	1364.008	1363.858	1364.020	1363.733
11	1364.267	1363.986	1363.916	1364.289	1364.075	1364.126	1364.115	1364.174	1364.016	1363.766	1364.021	1363.716
12	1364.250	1363.882	1364.173	1364.339	1364.027	1364.202	1364.108	1364.192	1364.053	1363.653	1364.029	1363.732
13	1364.270	1363.857	1364.191	1364.283	1363.940	1364.296	1364.095	1364.121	1364.067	1363.523	1364.021	1363.750
14	1364.211	1363.900	1364.263	1364.150	1363.998	1364.241	1364.048	1364.075	1364.091	—	1364.068	1363.798
15	1364.124	1364.007	1364.326	1364.038	1363.951	1364.127	1363.961	1364.019	1364.164	—	1364.058	1363.761
16	1363.998	1364.154	1364.386	1364.027	—	1364.053	1363.993	1364.032	1364.118	—	1364.111	1363.762
17	1363.927	1364.214	1364.381	1364.043	—	1364.018	1364.029	1364.047	1364.075	—	1364.021	1363.749
18	1363.980	1364.144	1364.329	—	—	1364.022	1364.079	1364.028	1364.085	—	1364.092	1363.696
19	1364.077	1364.020	1364.278	—	—	1364.070	1364.126	1364.041	1364.105	1364.197	1364.094	1363.696
20	1364.144	1363.954	1364.226	—	—	1364.087	1364.135	1364.069	1364.137	—	1364.064	1363.758
21	1364.168	1363.937	1364.186	1364.530	—	1364.044	1364.128	1364.063	1364.167	—	1364.089	1363.652
22	1364.142	1364.033	1364.158	1364.400	—	1364.006	1364.028	1364.036	1364.188	1364.201	1363.979	1363.750
23	1364.065	1364.156	1364.158	1364.249	—	1364.019	1364.139	1364.008	1364.159	1364.112	1364.085	1363.820
24	1363.968	1364.246	1364.551	1364.222	1364.336	1363.999	1364.147	1363.934	1364.173	1364.146	1363.908	1363.815
25	1363.939	1364.294	1364.555	1364.154	1364.285	1364.027	1364.161	1364.013	1364.151	1364.005	1363.949	1363.705
26	1363.966	1364.276	1364.536	1364.168	1364.216	1364.063	1364.157	1364.159	1364.146	1364.127	1363.886	1363.758
27	1364.040	1364.185	1364.304	1364.153	1364.182	1364.090	1364.175	1364.259	1364.117	1364.187	1363.999	1364.097
28	1364.100	1364.050	1364.225	1364.105	1364.158	1364.125	1364.215	1364.326	1364.141	1364.166	1364.021	—
29	1364.128	—	1364.155	1364.098	1364.161	1364.142	1364.242	1364.292	1364.159	1364.128	1363.987	1364.262
30	1364.099	—	1364.068	1364.112	—	—	1364.288	1364.148	1364.155	1363.815	1364.191	—
31	1364.087	—	—	1364.107	—	—	1364.284	—	1364.078	—	1364.282	—

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

**1996 Daily Mean Solar Irradiance  
UARS (ACRIM2) Completed Mission**



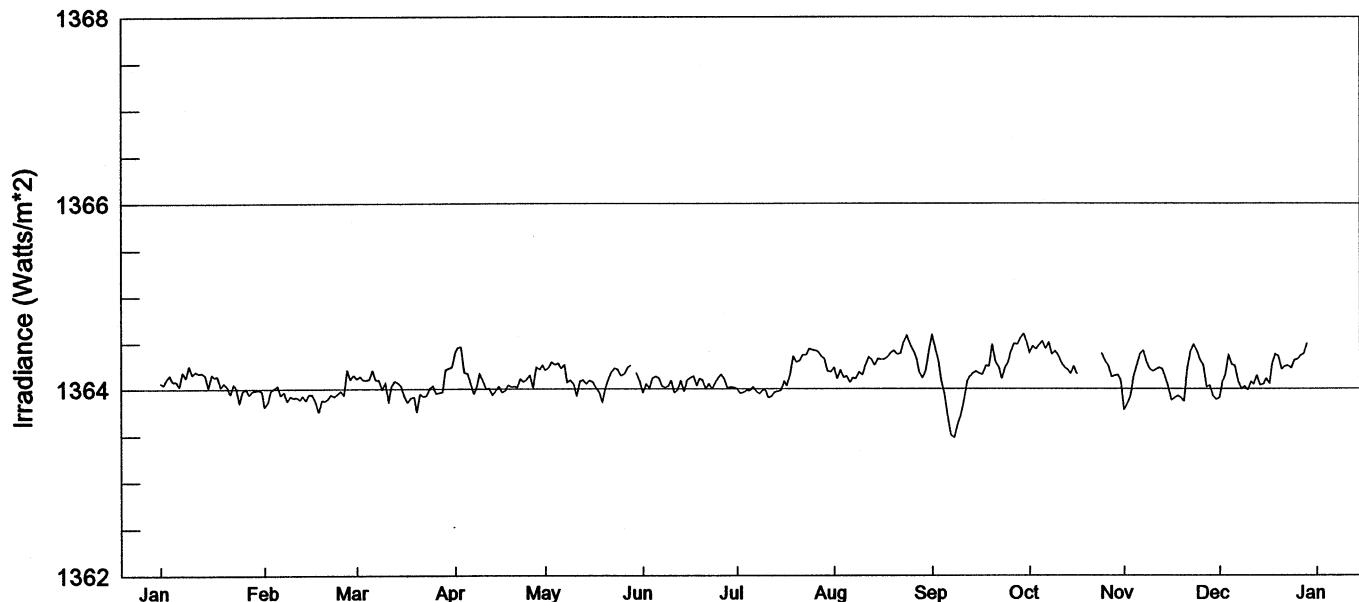
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.181	1363.962	1363.956	1363.814	1363.881	1363.865	1364.063	1363.763	1364.239	1363.956	1363.867	1363.742
2	1364.244	1363.945	1363.872	1363.832	1363.933	1363.868	1364.112	1363.833	1364.247	1363.872	1363.887	1363.753
3	1364.145	—	1363.853	1363.910	1363.906	1363.854	1364.119	1363.795	—	1363.894	1363.872	1363.679
4	1364.009	—	1363.908	1363.923	1363.923	1363.938	1364.100	1363.778	1363.965	1363.962	1363.877	1363.664
5	1363.937	—	1363.852	1363.880	1363.922	1364.007	1364.077	1363.969	1363.902	1363.889	1363.783	1363.616
6	1364.060	—	—	1363.908	1363.942	1363.935	1364.039	1364.088	1363.843	1363.886	1363.884	1363.685
7	1364.038	—	1363.798	1363.943	1363.980	1363.886	1364.034	1364.104	1363.868	1363.871	1363.829	1363.720
8	1364.033	—	1363.763	1363.940	—	1363.916	1363.778	1363.996	1363.857	1363.982	1363.869	1363.705
9	1364.072	—	1363.830	1363.899	—	1363.950	1363.676	1363.910	1363.857	1364.035	1363.879	1363.744
10	1364.028	—	1363.763	1363.900	1364.127	1364.021	1363.768	1363.894	1363.844	1364.001	1363.830	1363.772
11	1363.972	—	1363.855	1363.844	1363.994	1364.027	1363.868	1363.816	1363.840	1364.095	1363.958	1363.802
12	1363.923	1363.847	1363.681	1363.819	1364.023	1363.997	1364.007	1363.812	1363.784	1364.082	1363.994	1363.780
13	1363.877	1363.745	1363.760	1363.823	1364.088	1364.033	1363.975	1363.893	1363.823	1363.996	1363.986	1363.976
14	1363.900	1363.689	1363.802	1363.741	—	1364.014	1363.919	1363.865	1363.831	1364.023	1363.959	1363.997
15	1363.924	1363.707	1363.836	1363.821	1364.406	1363.959	1363.950	1363.837	1363.789	1364.055	1364.055	1363.889
16	1363.916	1363.743	1363.916	1363.780	1364.336	1363.946	1363.954	1363.818	1363.801	1364.000	1363.973	1363.894
17	1363.888	1363.748	1363.958	1363.816	1364.299	1363.948	1363.935	1363.811	1363.807	1364.072	1364.113	1363.947
18	1363.910	1363.711	1364.000	1363.780	1364.196	1363.894	1363.960	1363.836	1363.851	1364.094	1364.054	1363.966
19	1363.880	1363.733	1363.990	1363.883	1364.169	1363.971	1363.990	1363.904	1363.836	1364.104	1364.000	1364.020
20	1363.923	1363.856	1363.950	1363.814	1363.979	1363.990	1363.991	1363.912	1363.850	1364.146	1364.016	1364.077
21	1363.895	1363.912	1363.956	1363.708	1364.013	1363.990	1363.968	1363.904	1363.972	1364.038	1364.027	1364.061
22	1363.897	1363.907	1363.883	1363.829	1363.855	1364.001	—	1363.919	1364.052	1364.087	1363.927	1364.178
23	1363.955	1363.892	1363.885	1363.774	1363.986	1363.960	—	1363.981	1364.076	1364.058	1363.586	1364.204
24	1363.908	1363.816	1363.908	1363.820	1363.898	1363.990	—	1364.099	1364.052	1364.071	1363.264	1364.244
25	1363.834	1363.831	1363.948	1363.850	1363.947	1363.872	—	1364.217	1364.059	1364.050	1362.847	1364.112
26	1364.004	1363.907	1363.937	1363.850	—	1363.761	—	1364.233	1364.047	1364.011	1362.917	1364.122
27	1363.985	1363.910	1363.962	1363.828	—	1363.829	—	1364.166	1364.017	1364.039	1363.012	1364.154
28	1363.989	1363.904	1364.030	1363.839	1363.983	1363.897	—	1364.166	1364.026	1364.003	1363.073	1363.991
29	1364.031	1363.919	1363.987	1363.862	1363.894	1363.998	—	1364.145	1364.021	1363.961	1363.329	1363.975
30	1364.000	—	1363.970	1363.835	1363.829	1364.025	1364.097	1364.175	1364.020	1363.910	1363.630	1363.901
31	1363.969	—	1363.968	—	1363.869	—	1363.961	1364.173	—	1363.871	—	1364.022

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

**1997 Daily Mean Solar Irradiance  
UARS (ACRIM2) Completed Mission**

35  
Misc

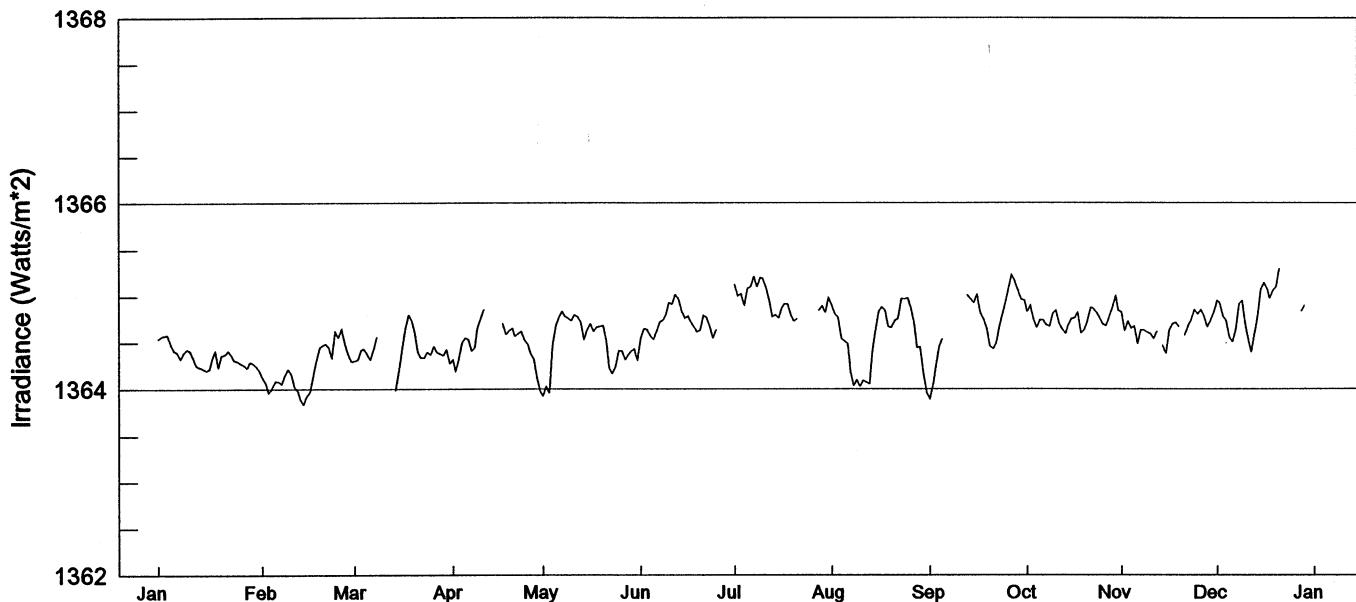


Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.181	1363.962	1363.956	1363.814	1363.881	1363.865	1364.063	1363.763	1364.239	1363.956	1363.867	1363.742
2	1364.244	1363.945	1363.872	1363.832	1363.933	1363.868	1364.112	1363.833	1364.247	1363.872	1363.887	1363.753
3	1364.145	—	1363.853	1363.910	1363.906	1363.854	1364.119	1363.795	—	1363.894	1363.872	1363.679
4	1364.009	—	1363.908	1363.923	1363.923	1363.938	1364.100	1363.778	1363.965	1363.962	1363.877	1363.664
5	1363.937	—	1363.852	1363.880	1363.922	1364.007	1364.077	1363.969	1363.902	1363.889	1363.783	1363.616
6	1364.060	—	—	1363.908	1363.942	1363.935	1364.039	1364.088	1363.843	1363.886	1363.884	1363.685
7	1364.038	—	1363.798	1363.943	1363.980	1363.886	1364.034	1364.104	1363.868	1363.871	1363.829	1363.720
8	1364.033	—	1363.763	1363.940	—	1363.916	1363.778	1363.996	1363.857	1363.982	1363.869	1363.705
9	1364.072	—	1363.830	1363.899	—	1363.950	1363.676	1363.910	1363.857	1364.035	1363.879	1363.744
10	1364.028	—	1363.763	1363.900	1364.127	1364.021	1363.768	1363.894	1363.844	1364.001	1363.830	1363.772
11	1363.972	—	1363.855	1363.844	1363.994	1364.027	1363.868	1363.816	1363.840	1364.095	1363.958	1363.802
12	1363.923	1363.847	1363.681	1363.819	1364.023	1363.997	1364.007	1363.812	1363.784	1364.082	1363.994	1363.780
13	1363.877	1363.745	1363.760	1363.823	1364.088	1364.033	1363.975	1363.893	1363.823	1363.996	1363.986	1363.976
14	1363.900	1363.689	1363.802	1363.741	—	1364.014	1363.919	1363.865	1363.831	1364.023	1363.959	1363.997
15	1363.924	1363.707	1363.836	1363.821	1364.406	1363.959	1363.950	1363.837	1363.789	1364.055	1364.055	1363.889
16	1363.916	1363.743	1363.916	1363.780	1364.336	1363.946	1363.954	1363.818	1363.801	1364.000	1363.973	1363.894
17	1363.888	1363.748	1363.958	1363.816	1364.299	1363.948	1363.935	1363.811	1363.807	1364.072	1364.113	1363.947
18	1363.910	1363.711	1364.000	1363.780	1364.196	1363.894	1363.960	1363.836	1363.851	1364.094	1364.054	1363.966
19	1363.880	1363.733	1363.990	1363.883	1364.169	1363.971	1363.990	1363.904	1363.836	1364.104	1364.000	1364.020
20	1363.923	1363.856	1363.950	1363.814	1363.979	1363.990	1363.991	1363.912	1363.850	1364.146	1364.016	1364.077
21	1363.895	1363.912	1363.956	1363.708	1364.013	1363.990	1363.968	1363.904	1363.972	1364.038	1364.027	1364.061
22	1363.897	1363.907	1363.883	1363.829	1363.855	1364.001	—	1363.919	1364.052	1364.087	1363.927	1364.178
23	1363.955	1363.892	1363.885	1363.774	1363.986	1363.960	—	1363.981	1364.076	1364.058	1363.586	1364.204
24	1363.908	1363.816	1363.908	1363.820	1363.898	1363.990	—	1364.099	1364.052	1364.071	1363.264	1364.244
25	1363.834	1363.831	1363.948	1363.850	1363.947	1363.872	—	1364.217	1364.059	1364.050	1362.847	1364.112
26	1364.004	1363.907	1363.937	1363.850	—	1363.761	—	1364.233	1364.047	1364.011	1362.917	1364.122
27	1363.985	1363.910	1363.962	1363.828	—	1363.829	—	1364.166	1364.017	1364.039	1363.012	1364.154
28	1363.989	1363.904	1364.030	1363.839	1363.983	1363.897	—	1364.166	1364.026	1364.003	1363.073	1363.991
29	1364.031	1363.919	1363.987	1363.862	1363.894	1363.998	—	1364.145	1364.021	1363.961	1363.329	1363.975
30	1364.000	—	1363.970	1363.835	1363.829	1364.025	1364.097	1364.175	1364.020	1363.910	1363.630	1363.901
31	1363.969	—	1363.968	—	1363.869	—	1363.961	1364.173	—	1363.871	—	1364.022

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

**1998 Daily Mean Solar Irradiance**  
**UARS (ACRIM2) Completed Mission**



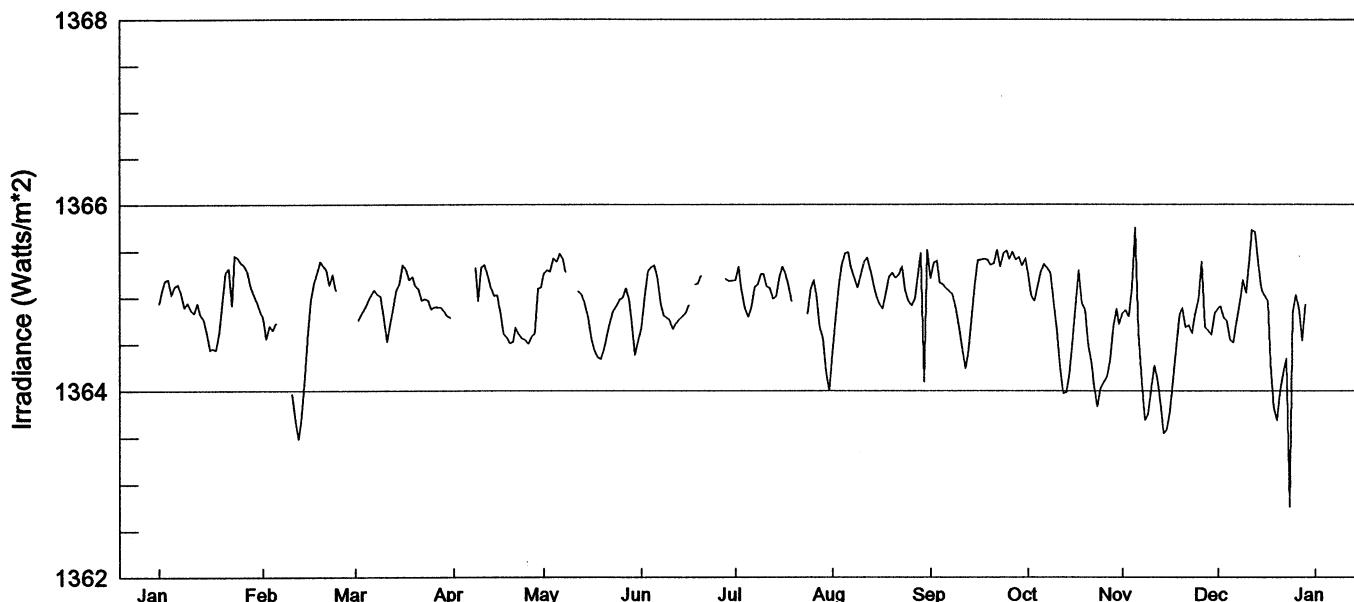
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.544	1364.244	1364.487	1364.364	1364.109	1364.432	—	1364.826	1364.182	1365.062	1365.003	1364.749
2	1364.565	1364.194	1364.375	1364.426	1363.977	1364.308	—	1364.987	1363.965	1364.963	1364.848	1364.828
3	1364.576	1364.128	1364.295	1364.277	1363.925	1364.549	1365.123	1364.906	1363.893	1364.959	1364.831	1364.953
4	1364.584	1364.066	1364.300	1364.315	1364.025	1364.649	1365.007	1364.809	1364.040	1364.836	1364.631	1364.928
5	1364.486	1363.959	1364.313	1364.197	1363.959	1364.645	1365.026	1364.772	1364.268	1364.902	1364.735	1364.789
6	1364.410	1364.007	1364.417	1364.314	1364.476	1364.572	1364.904	1364.540	1364.445	1364.751	1364.656	1364.741
7	1364.397	1364.085	1364.432	1364.500	1364.682	1364.535	1365.082	1364.512	1364.544	1364.667	1364.678	1364.553
8	1364.324	1364.087	1364.382	1364.545	1364.781	1364.620	1365.102	1364.486	—	1364.746	1364.488	1364.506
9	1364.391	1364.055	1364.315	1364.532	1364.844	1364.723	1365.208	1364.189	—	1364.746	1364.635	1364.634
10	1364.422	1364.148	1364.427	1364.412	1364.784	1364.748	1365.098	1364.036	—	1364.692	1364.638	1364.919
11	1364.411	1364.216	1364.564	1364.446	1364.768	1364.793	1365.194	1364.096	—	1364.674	1364.607	1364.952
12	1364.328	1364.163	—	1364.655	1364.742	1364.928	1365.190	1364.030	—	1364.810	1364.596	1364.689
13	1364.248	1364.022	—	1364.756	1364.799	1364.917	1365.094	1364.091	—	1364.848	1364.538	1364.513
14	1364.231	1363.988	—	1364.860	1364.781	1365.017	1364.963	1364.069	—	1364.713	1364.626	1364.398
15	1364.219	1363.889	—	—	1364.723	1364.968	1364.779	1364.056	1365.014	1364.641	—	1364.590
16	1364.200	1363.838	—	—	1364.534	1364.844	1364.798	1364.393	1364.970	1364.597	1364.465	1364.778
17	1364.216	1363.927	1363.987	—	1364.646	1364.769	1364.766	1364.631	1364.930	1364.688	1364.386	1365.072
18	1364.324	1363.968	1364.183	—	1364.706	1364.787	1364.874	1364.837	1365.018	1364.761	1364.628	1365.139
19	1364.411	1364.137	1364.427	—	1364.622	1364.718	1364.914	1364.881	1364.829	1364.768	1364.705	1365.079
20	1364.232	1364.307	1364.648	1364.707	1364.668	1364.663	1364.916	1364.847	1364.757	1364.829	1364.716	1364.982
21	1364.366	1364.444	1364.799	1364.587	1364.678	1364.616	1364.803	1364.670	1364.660	1364.605	1364.673	1365.062
22	1364.370	1364.468	1364.741	1364.629	1364.687	1364.639	1364.733	1364.665	1364.458	1364.636	—	1365.093
23	1364.409	1364.486	1364.631	1364.659	1364.510	1364.795	1364.761	1364.738	1364.434	1364.734	1364.584	1365.299
24	1364.372	1364.455	1364.396	1364.572	1364.233	1364.776	—	1364.758	1364.502	1364.877	1364.680	—
25	1364.308	1364.334	1364.337	1364.594	1364.165	1364.676	—	1364.973	1364.675	1364.872	1364.751	—
26	1364.301	1364.626	1364.338	1364.626	1364.243	1364.545	—	1364.973	1364.824	1364.827	1364.851	—
27	1364.276	1364.555	1364.394	1364.524	1364.413	1364.640	—	1364.977	1364.952	1364.776	1364.808	—
28	1364.264	1364.652	1364.368	1364.486	1364.410	—	—	1364.872	1365.079	1364.701	1364.853	—
29	1364.224	—	1364.461	1364.379	1364.313	—	—	1364.705	1365.228	1364.686	1364.781	—
30	1364.291	—	1364.394	1364.319	1364.372	—	1364.845	1364.449	1365.159	1364.779	1364.673	1364.838
31	1364.274	—	1364.380	—	1364.406	—	1364.895	1364.450	—	1364.885	—	1364.905

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

**1999 Daily Mean Solar Irradiance  
UARS (ACRIM2) Completed Mission**

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Misc



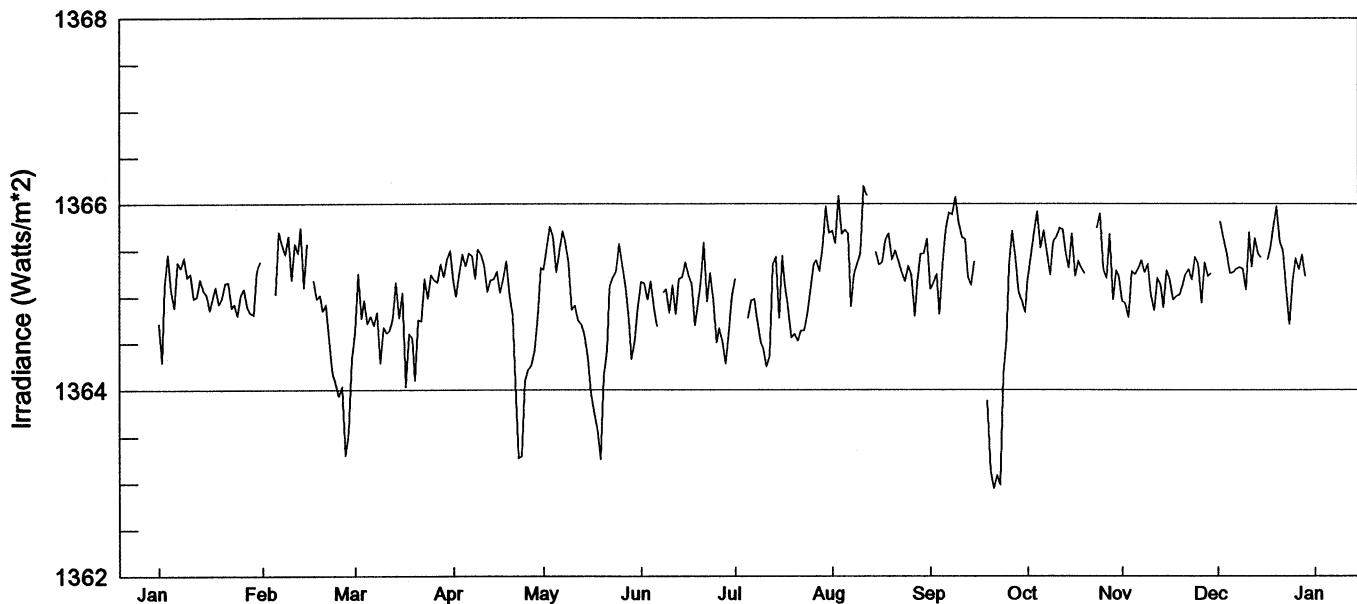
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.940	1364.942	—	1364.856	1365.091	1364.383	1365.174	1364.190	1364.094	1365.433	1364.882	1364.601
2	1365.096	1364.849	—	1364.798	1365.116	1364.544	1365.183	1364.002	1365.511	1365.348	1364.717	1364.836
3	1365.180	1364.789	—	1364.788	1365.257	1364.676	1365.184	1364.421	1365.206	1365.421	1364.836	1364.885
4	1365.197	1364.560	—	—	1365.292	1364.997	1365.336	1364.781	1365.371	1365.265	1364.872	1364.912
5	1365.031	1364.700	1364.762	—	1365.277	1365.277	1365.060	1365.131	1365.398	1365.020	1364.799	1364.784
6	1365.119	1364.650	1364.837	—	1365.421	1365.326	1364.879	1365.365	1365.161	1364.963	1365.113	1364.750
7	1365.138	1364.736	1364.877	—	1365.387	1365.346	1364.792	1365.476	1365.145	1365.120	1365.748	1364.550
8	1365.048	—	1364.949	—	1365.471	1365.214	1364.897	1365.486	1365.103	1365.277	1364.623	1364.522
9	1364.892	—	1365.028	—	1365.414	1364.939	1365.117	1365.317	1365.070	1365.360	1364.110	1364.748
10	1364.945	—	1365.078	—	1365.274	1364.806	1365.138	1365.207	1365.031	1365.317	1363.687	1364.946
11	1364.866	—	1365.032	1365.319	—	1364.787	1365.251	1365.107	1364.893	1365.265	1363.756	1365.193
12	1364.837	1363.967	1365.013	1364.965	—	1364.761	1365.254	1365.242	1364.689	1364.951	1364.034	1365.053
13	1364.941	1363.699	1364.782	1365.323	—	1364.662	1365.123	1365.381	1364.450	1364.655	1364.277	1365.409
14	1364.810	1363.481	1364.525	1365.357	1365.068	1364.726	1365.103	1365.431	1364.241	1364.239	1364.107	1365.723
15	1364.763	1363.672	1364.684	1365.240	1365.030	1364.764	1364.983	1365.301	1364.396	1363.975	1363.828	1365.703
16	1364.617	1364.068	1364.873	1365.105	1364.937	1364.801	1365.010	1365.171	1364.756	1363.988	1363.544	1365.367
17	1364.436	1364.548	1365.079	1365.022	1364.799	1364.834	1365.215	1365.020	1365.117	1364.168	1363.588	1365.081
18	1364.450	1364.961	1365.152	1365.025	1364.574	1364.925	1365.331	1364.930	1365.403	1364.509	1363.800	1365.022
19	1364.441	1365.154	1365.352	1364.850	1364.435	—	1365.261	1364.879	1365.409	1364.902	1364.142	1364.965
20	1364.608	1365.261	1365.304	1364.607	1364.361	1365.140	1365.143	1365.043	1365.412	1365.292	1364.500	1364.305
21	1364.954	1365.386	1365.188	1364.573	1364.341	1365.151	1364.955	1365.222	1365.408	1364.936	1364.837	1363.818
22	1365.275	1365.347	1365.224	1364.513	1364.447	1365.240	—	1365.266	1365.351	1364.874	1364.889	1363.690
23	1365.316	1365.305	1365.125	1364.527	1364.608	—	—	1365.209	1365.366	1364.493	1364.682	1363.996
24	1364.914	1365.134	1365.092	1364.677	1364.731	—	—	1365.246	1365.512	1364.308	1364.703	1364.198
25	1365.451	1365.242	1364.971	1364.609	1364.858	—	—	1365.332	1365.331	1364.059	1364.626	1364.352
26	1365.429	1365.073	1364.988	1364.558	1364.908	—	1364.829	1365.069	1365.474	1363.834	1364.841	1362.762
27	1365.376	—	1364.972	1364.547	1364.982	—	1365.092	1364.959	1365.501	1364.032	1364.977	1364.846
28	1365.350	—	1364.873	1364.506	1365.000	—	1365.186	1364.916	1365.413	1364.098	1365.387	1365.027
29	1365.270	—	1364.901	1364.580	1365.101	—	1365.023	1364.994	1365.490	1364.156	1364.687	1364.880
30	1365.116	—	1364.892	1364.619	1364.982	1365.200	1364.685	1365.215	1365.407	1364.327	1364.648	1364.540
31	1365.027	—	1364.895	—	1364.730	—	1364.568	1365.478	—	1364.692	—	1364.929

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

# 2000 Daily Mean Solar Irradiance

## UARS (ACRIM2) Completed Mission



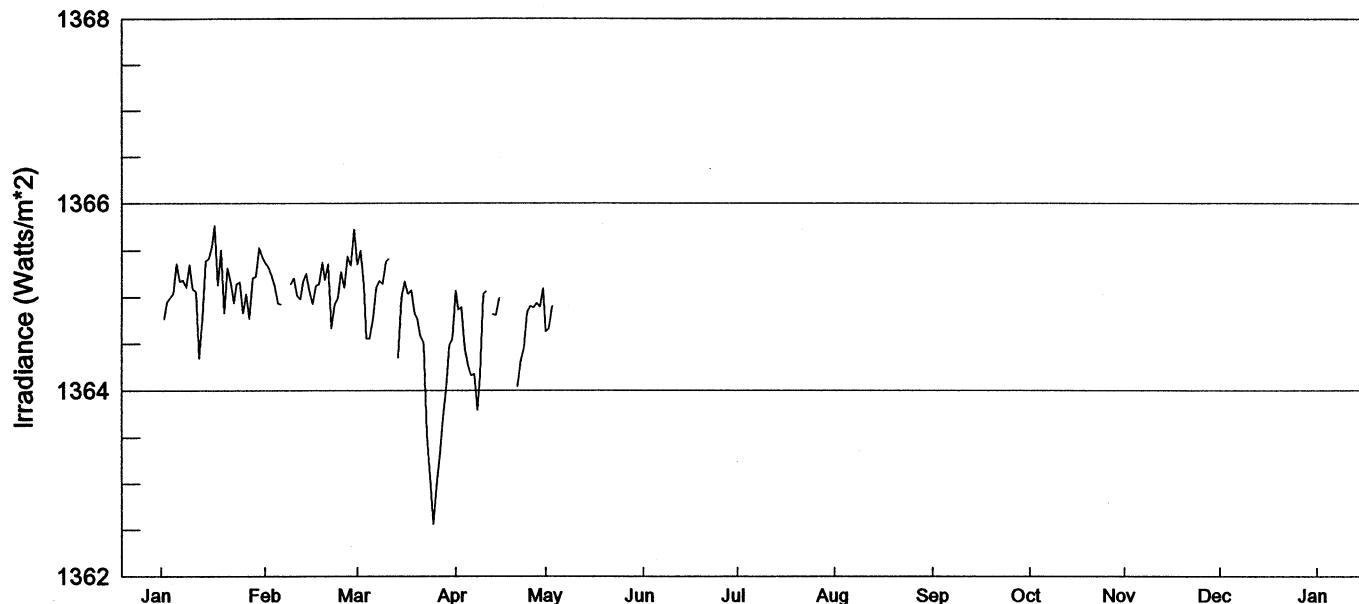
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1364.711	1365.276	1363.552	1365.405	1365.316	1364.899	1365.012	1365.691	1365.628	1364.956	1365.229	—
2	1364.298	1365.382	1364.329	1365.496	1365.290	1365.163	1365.198	1365.708	1365.084	1364.835	1364.957	—
3	1365.130	—	1364.620	1365.165	1365.515	1365.151	—	1365.577	1365.154	1365.194	1364.928	1365.811
4	1365.454	—	1365.249	1365.003	1365.756	1364.970	—	1366.089	1365.244	1365.440	1364.781	1365.637
5	1365.073	—	1364.767	1365.246	1365.650	1365.172	—	1365.676	1364.812	1365.696	1365.277	1365.476
6	1364.884	—	1364.966	1365.453	1365.261	1364.887	1364.776	1365.721	1365.350	1365.923	1365.243	1365.256
7	1365.376	1365.030	1364.711	1365.330	1365.497	1364.678	1364.966	1365.683	1365.721	1365.525	1365.308	1365.261
8	1365.316	1365.703	1364.793	1365.469	1365.709	—	1364.981	1364.894	1365.905	1365.719	1365.396	1365.309
9	1365.421	1365.567	1364.689	1365.443	1365.591	1365.054	1364.729	1365.243	1365.890	1365.474	1365.267	1365.317
10	1365.213	1365.456	1364.835	1365.198	1365.374	1365.087	1364.507	1365.363	1366.077	1365.239	1365.352	1365.306
11	1365.251	1365.656	1364.291	1365.510	1364.865	1364.829	1364.448	1365.473	1365.796	1365.603	1365.020	1365.083
12	1364.987	1365.180	1364.671	1365.457	1364.912	1365.127	1364.252	1366.196	1365.642	1365.648	1364.851	1365.695
13	1365.005	1365.571	1364.609	1365.338	1364.745	1364.812	1364.367	1366.089	1365.618	1365.743	1365.202	1365.326
14	1365.193	1365.470	1364.636	1365.056	1364.706	1365.196	1365.349	—	1365.214	1365.722	1365.134	1365.635
15	1365.076	1365.741	1364.758	1365.180	1364.589	1365.207	1365.432	—	1365.128	1365.452	1364.890	1365.462
16	1365.029	1365.097	1365.154	1365.188	1364.354	1365.372	1364.775	1365.474	1365.384	1365.316	1365.284	1365.421
17	1364.858	1365.575	1364.774	1365.272	1363.968	1365.233	1365.440	1365.348	—	1365.685	1365.191	—
18	1364.980	—	1365.048	1365.047	1363.753	1365.139	1365.136	1365.372	—	1365.221	1364.972	1365.410
19	1365.105	1365.174	1364.039	1365.195	1363.575	1364.693	1364.881	1365.620	—	1365.390	1365.012	1365.508
20	1364.921	1364.974	1364.604	1365.390	1363.258	1364.899	1364.559	1365.679	1363.884	1365.309	1365.028	1365.759
21	1364.994	1365.020	1364.553	1365.017	1364.149	1365.154	1364.601	1365.403	1363.134	1365.248	1365.115	1365.977
22	1365.146	1364.846	1364.105	1364.801	1364.421	1365.588	1364.525	1365.497	1362.942	—	1365.243	1365.597
23	1365.159	1364.917	1364.750	1364.084	1365.106	1364.949	1364.635	1365.388	1363.090	—	1365.297	1365.498
24	1364.883	1364.540	1364.737	1363.274	1365.211	1365.259	1364.639	1365.266	1362.982	—	1365.187	1365.089
25	1364.926	1364.185	1365.194	1363.295	1365.270	1364.966	1364.818	1365.170	1364.168	1365.743	1365.430	1364.703
26	1364.798	1364.071	1364.988	1364.100	1365.572	1364.509	1365.081	1365.330	1364.539	1365.903	1365.354	1365.165
27	1365.028	1363.933	1365.241	1364.220	1365.335	1364.664	1365.351	1365.231	1365.335	1365.300	1364.941	1365.413
28	1365.086	1364.039	1365.183	1364.264	1365.110	1364.529	1365.397	1364.791	1365.711	1365.203	1365.371	1365.299
29	1364.897	1363.298	1365.158	1364.417	1364.752	1364.283	1365.281	1365.159	1365.424	1365.671	1365.223	1365.454
30	1364.830	—	1365.355	1364.779	1364.333	1364.611	1365.532	1365.465	1365.046	1364.970	1365.257	1365.216
31	1364.808	—	1365.217	—	1364.522	—	1365.976	1365.462	—	1365.283	—	—

NOTE: — indicates data not available.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

**2001 Daily Mean Solar Irradiance  
UARS (ACRIM2) Completed Mission**

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Misc



Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	—	1365.526	1365.433	1364.017	1364.898							
2	1364.768	1365.437	1365.338	1364.483	1365.093							
3	1364.952	1365.376	1365.725	1364.547	1364.629							
4	1364.991	1365.329	1365.343	1365.066	1364.661							
5	1365.038	1365.238	1365.495	1364.867	1364.910							
6	1365.359	1365.123	1365.135	1364.886								
7	1365.171	1364.940	1364.552	1364.457								
8	1365.182	1364.918	1364.554	1364.278								
9	1365.106	—	1364.764	1364.169								
10	1365.349	—	1365.101	1364.178								
11	1365.090	1365.145	1365.177	1363.793								
12	1365.057	1365.205	1365.138	1364.159								
13	1364.342	1365.013	1365.379	1365.032								
14	1364.768	1364.981	1365.417	1365.065								
15	1365.385	1365.161	—	—								
16	1365.418	1365.254	—	1364.810								
17	1365.555	1365.065	1364.348	1364.808								
18	1365.764	1364.927	1364.998	1364.995								
19	1365.127	1365.121	1365.172	—								
20	1365.501	1365.142	1365.032	—								
21	1364.830	1365.376	1365.073	—								
22	1365.312	1365.179	1364.822	—								
23	1365.164	1365.355	1364.775	—								
24	1364.935	1364.667	1364.576	1364.040								
25	1365.138	1364.919	1364.511	1364.324								
26	1365.163	1364.990	1363.538	1364.451								
27	1364.831	1365.272	1363.073	1364.842								
28	1365.033	1365.102	1362.564	1364.903								
29	1364.767		1362.972	1364.887								
30	1365.206		1363.289	1364.937								
31	1365.220		1363.697									

NOTE: — indicates data not available.

Mission ended 5 May, 2001.

NOTE: The ratio of ACRIM1 to ACRIM2, defined by mutual comparisons with NIMUS7/ERB, is 1.002609.

